CALIFORNIA DIVISION OF MINES AND GEOLOGY

FAULT EVALUATION REPORT FER-75

July 8, 1980

1. NAME OF FAULT

The San Andreas fault (Los Angeles County)

2. LOCATION OF FAULT

This report covers 3 segments of the San Andreas fault, all of which occur within Los Angeles County. Figure 1 shows the location of these segments. They lie within the La Liebre Ranch, Liebre Mtn., Lake Hughes, and Valyermo 7 1/2' quadrangles (see figures 2, 3, and 4).

3. REASON FOR EVALUATION

The San Andreas fault, in this region, was zoned in 1974 during the initial implementation of the Alquist-Priolo Act. The Los Angeles Basin region was subsequently reviewed in much greater detail by the A-P staff during 1977-78 as part of the ongoing 10-year plan, and parts of the zones along the San Andreas fault within Los Angeles County were modified because of the availability of newer and more detailed information (see FER-5, FER-70, and Hart and others, 1978). Subsequent to that work, three additional sources of detailed mapping of the San Andreas fault in that area were released, and that is the reason for this FER. We believe that, considering the importance of the San Andreas fault, the existing special studies zones should be compared with the portrayal of the fault shown in the more recent studies, and that this report of our findings and recommendations should be prepared.

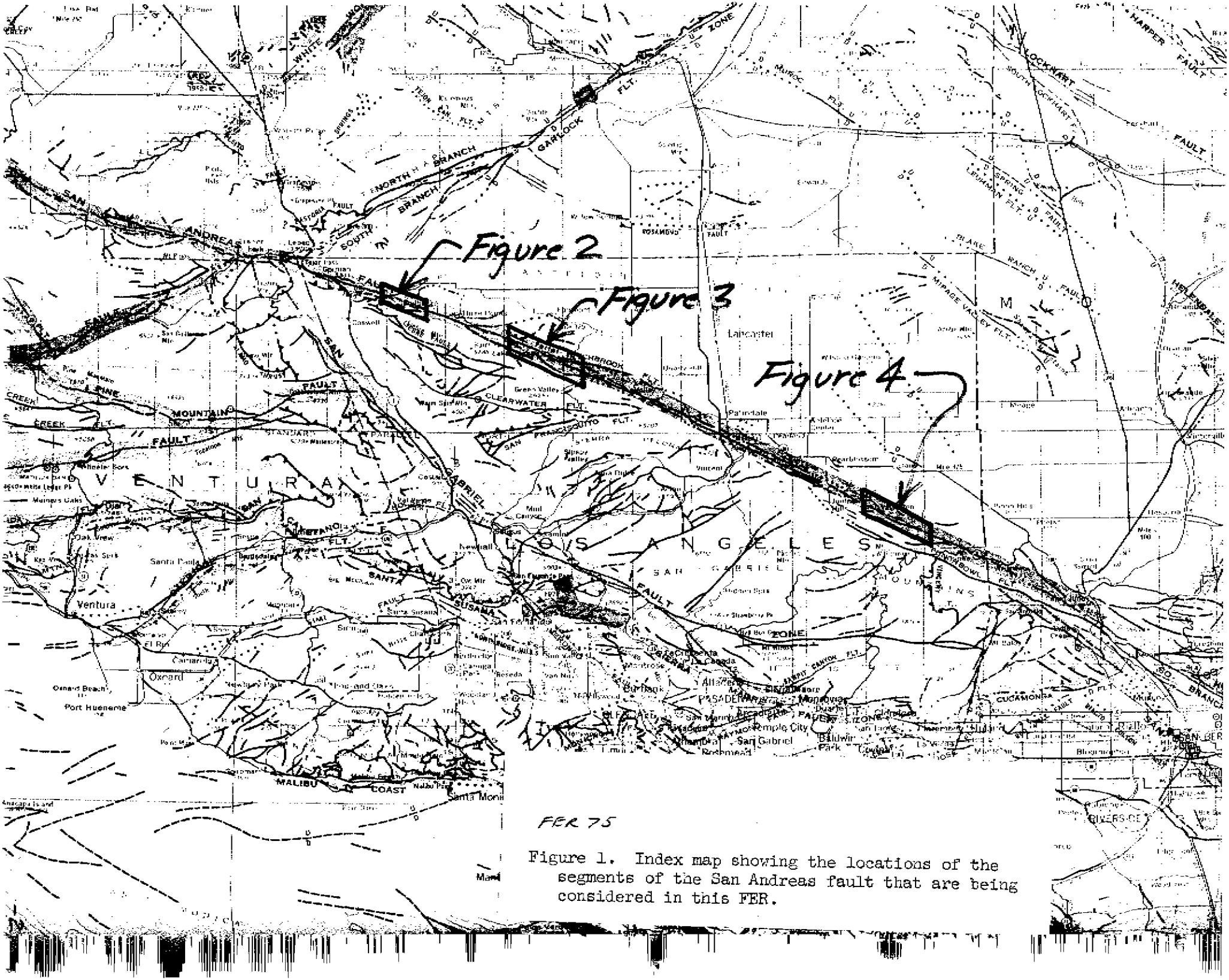

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Figure 1. Index map showing the locations of the segments of the San Andreas fault that are being considered in this FER.

4. LIST OF REFERENCES

Barrows, A.G., 1978, Preliminary fault map of the Valyermo segment, San Andreas fault zone, Los Angeles County, California: California Division of Mines and Geology Open-File Report 78-3 LA

Beeby, D.J., 1978, Preliminary fault map of the Lake Hughes segment, San Andreas fault zone, Los Angeles County, California: California Division of Mines and Geology Open-File Report 78-2 LA

Hart, E.W., Smith, D.P., and Smith, T.C., 1978, Summary report, fault evaluation program, 1977 area (Los Angeles Basin region): California Division of Mines and Geology Open-File Report 78-10 SF

Kahle, J.E., 1978, Preliminary fault map, east half Quail Lake segment, San Andreas fault zone, Los Angeles County, California: California Division of Mines and Geology Open-File Report 78-1 LA

5. SUMMARY OF AVAILABLE DATA

Figures 2, 3, and 4 show, in orange lines, the fault traces of the San Andreas fault zone as depicted in the above references. The existing special studies zones encompass most of these traces (the base maps for figures 2, 3, and 4 are the existing 1974 SSZ maps). There are a number of places where the recently mapped traces occur outside the existing special studies zones, especially within the Lake Hughes quadrangle (figure 3). However, in that quadrangle, I am personally familiar with the long arcuate fault that lies to the south of the special studies zone, having mapped the eastern part of it in detail in 1974 when I was assigned to the San Andreas Project. That trace is not accompanied by topographic features suggestive of Holocene activity.

I do not have such a personal familiarity with the other traces that are show, on Figures 2, 3, and 4, to be outside the existing special studies zones. And Barrows, Beeby, and Kahle do not quantify the recency of movement along those traces in a manner that will allow

us to make a zoning judgement based on our criteria for recency. However, I am sufficiently familiar with all of the areas to know that the principal active branches of the San Andreas fault lie well within the existing special studies zones.

9. RECOMMENDATIONS

I recommend retaining the existing special studies zones at this time. The detailed mapping by Barrows, Beeby, and Kahle will make it possible to refine the existing zone boundaries, but to do so will require some additional work by the A-P staff, including aerial photo examination and field checking to determine which traces meet the A-P criteria for Holocene activity. Currently, there is little urbanizing pressure in these areas, and only the Lake Hughes area has seen any significant subdividing or housing construction during the past two decades. Nearly all of that lies within the existing special studies zone.

As there appears to be no significant shortcomings to the existing special studies zones, it would be appropriate to wait and carry out the zone boundary refinements at a time when all of the special studies zones in this region are being reviewed and updated.

10. INVESTIGATING GEOLOGIST; DATE

Drew Smith

Drew Smith
July 8, 1980

I agree with recommendations, plotted faults (orange lines) plotted by Jim Moreno (1975?), but time constraints did not permit writing a text at that time, altho a tentative decision was made not to revise zones at that time.
Ellett